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IMPACTS OF RECREATION SUBDIVISIONS IN THE SOUTH-CENTRAL MOUNTAINS OF COLORADO.
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Economic Research Service, U.S. Department of Agriculture.

ABSTRACT

Briefly describes the characteristics of 58 recreation subdivisions in Chaffee, Custer, Fremont, Huerfano, Lake, Las Animas, and Pueblo Counties in Colorado platted between 1967 and 1972, as well as characteristics of lot owners. The main emphasis of the study was on a sample mail survey of lot owners. The survey indicated that immigration and housing construction have been low. About 42 percent of sample lot owners visited their properties in 1973, each staying an average of 3 weeks. Total expenditures in the project area by all 328 sample lot owners were \$118,637 in 1973, or \$362 per owner.

Key Words: Recreation, Mail survey, Public utilities, Building, Vacation, Land utilization, Economic impact, Wildlife, Developing areas.

PREFACE

This study of recreation subdivisions was done at the request of the Sangre de Cristo Project Council of the Resource Conservation and Development (RC&D) Project. This report is the third in a series of three on the impact of rural subdivisions on the Sangre de Cristo RC&D project area. The first report covered the inventory phase of the study. The second report was an appendix of tables and related data that could not be included in the other reports. This final report covers the economic and environmental aspects of rural subdivisions.

The author is indebted to Neil Cook, Dwight Gadsby, and Norman Landgren, Economic Research Service, for their assistance in planning and carrying out this study.

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SUMMARY

The major phases of this study were to (1) inventory the recreation subdivision activity in the south-central mountains of Colorado, (2) analyze findings of a mail survey of sample lot owners, (3) discuss selected lot owner expenditures and public service demands, and (4) evaluate economic and environmental impacts.

A survey of subdivisions in the project area revealed that 58 had platted over 75,000 acres of rural land into 45,000 lots between July 1, 1967 and July 1, 1972. According to the survey, 29,000 of these lots had been sold by the end of this period. About 3 percent of the sold lots contained dwelling units. Average price per lot ranged from \$700 to \$15,000 and average price per acre ranged from \$400 to \$30,000.

Questionnaires were mailed to 500 sample lot owners; 328 were returned. Computations in the study were based on these 328 responses. The typical lot owner was male, employed as a professional or manager, received an average annual income of \$17,000, and lived out of the State. Age distribution was bimodal; 28 percent were between 25 and 34 years of age and 42 percent were between 45 and 64 years of age.

During a normal year, 41 percent of the owners visited their properties and stayed slightly less than 3 weeks. Recreation activities were primarily sightseeing, camping, and fishing. About 33 percent of survey lot owners indicated they planned to move into the project area, over half in the next 5 years.

Only 24 percent of the survey lot owners were dissatisfied with their purchases. The main reason for dissatisfaction was that value of the lot had not increased enough. The high level of satisfaction may be due in part to the fact that three-fourths of the owners saw their lots before buying and that over half heard of their lots from a friend or relative.

The major share of the 75,000 acres of subdivided land had previously been used as rough, open, or woodland grazing. During 1967-72, 2,483 acres of this land were urbanized or built up. Eventually, this is expected to increase to almost 53,000 acres. Very little of this subdivided land will come from prime agricultural land.

Annual development expenditures (including the multiplier effect) were \$215,085, or an average of \$656 per survey lot owner. Annual nondevelopment expenditures were \$111,845, or \$341 per lot owner. Combined expenditures were \$326,934, or \$997 per lot owner.

Imputed costs to the county in providing public services for the average lot owner were \$35. This low cost reflects difficulty in costing out the demands for all public services by lot owners.

The Colorado Division of Wildlife conducted a survey on the 58 subdivisions identified in this study. The survey revealed that at least 11 species of wildlife are in danger of being lost on these subdivided lands--the mule deer, antelope, quail, wild turkey, peregrine falcon, prairie falcon, elk, mountain

lion, blue grouse, bighorn sheep, and pine squirrel. The study indicated that these animals are intolerant of human disturbance and their existence will be threatened if the subdivisions are fully developed.

The peregrine falcon and the black-footed ferret are the only species having an official status on the Federal endangered species list that may be lost as a result of subdivision development on this land.

Pueblo County will experience the greatest impact from the surveyed developments. Although only 9 percent of the subdivisions are in that county, they accounted for 40 percent of the total acreage, 60 percent of the dwelling units, and 80 percent of the lots.

IMPACTS OF RECREATION SUBDIVISIONS
IN THE SOUTH-CENTRAL MOUNTAINS OF COLORADO

by

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Agricultural Economist

INTRODUCTION

In some areas of the United States, extensive subdivision of rural lands will have a profound effect on land resources, the economic structures of local communities, and the environmental character of the area. Because effects of such subdivision, usually for second homes or recreation spots, can be so pervasive, implications must be considered in designing resource or development plans.

The mountain area west and southwest of Colorado Springs and Pueblo, Colorado, is one of those critical areas undergoing rapid subdivision. A Resource Conservation and Development Project (RC&D) has been established to help guide orderly conservation and development of this area.^{1/} To gain insight into the economic and environmental impacts of the subdivision activity, the Economic Research Service (ERS) undertook an inventory of recreation subdivisions and a survey of lot owners in the Sangre de Cristo RC&D project area, which includes Chaffee, Custer, Fremont, Huerfano, Lake, Las Animas, and Pueblo Counties.

Objectives and Procedures

Major objectives of the overall study were to (1) identify extent of subdivision activity in the project area, and (2) project potential effects on land use, population, community facilities and services, and the environment. The procedure includes (1) physical inventory of all recreation subdivisions recorded in county clerk offices in the project area between 1967 and 1972, and (2) a mail survey of a sample of all lot owners from these subdivisions. Results of the inventory were published in 1975 and that report (6)^{2/} is referred to here as the Inventory Report. It will be summarized in a later section of this report.

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- ^{1/} A Resource Conservation and Development Project is a locally initiated and sponsored activity whose purpose is to expand the economic opportunities of the people in an area by developing and implementing a plan of action for the orderly conservation, improvement, development, and effective use of their natural resources. The Soil Conservation Service of the U.S. Department of Agriculture provides technical and financial assistance.
- ^{2/} Underscored numbers in parentheses refers to literature cited on p. 30.

The second report (7), containing tables, definitions, and related material not included in this report, provides important background material to people involved in the planning and orderly growth of the Sangre de Cristo RC&D project area.

The major concern for this third report was to analyze the mail survey of a sample of lot owners delineated in the earlier reports. The time period covers all recreation subdivisions platted and recorded in county courthouses between July 1, 1967 and July 1, 1972. This 5-year span included most of the new developments in the project area, as well as old subdivisions that expanded during this period. The study was primarily concerned with subdivision of land outside urban areas or incorporated places, and adheres closely to the definition established by Colorado Senate Bill 35. The Bill (now a law) defines a subdivision as a division of land into two or more tracts where at least one of the resulting parcels is under 35 acres.

Sample Design and Response

According to the first report (6), over 29,000 lots were sold in 58 subdivisions between July 1, 1967, and July 1, 1972. Because a complete list of names and addresses was not available in the various county courthouses, we asked the county commissioners to write letters to each subdivider in their respective counties requesting this information. Forty-two of the 58 subdividers cooperated, providing over 3,000 names (table 1). One cooperating subdivision was very large, and we requested only a 10-percent sample from it. Developers of the other very large subdivision did not comply because they were conducting a smaller survey of their own lot owners at the same time. Results of their study are presented in this report.

A sample of 500 names and a comprehensive phone followup were expected to produce more reliable results than a 100-percent mailing to all lot owners with no attempt to contact nonrespondents. Thus, a questionnaire was mailed to 500 lot owners on February 8, 1974. A second letter with a questionnaire was sent 3 weeks later to all nonrespondents. These two mailings resulted in a 62-percent response. Two months after the initial mailing, a phone followup produced another 4 percent, resulting in a 66-percent total response--328 usable schedules out of a possible 500.

PHYSICAL CHARACTERISTICS OF THE STUDY AREA

The study area covers 8 million acres along the eastern slope of the Continental Divide in south-central Colorado. The area begins at the headwaters of the Arkansas River in Lake County, and extends some 250 miles southeastward to Las Animas County on the New Mexico border. Although there are permanent rural subdivisions around existing towns or cities, recreation subdivisions generally are more remote. With few exceptions, they are associated with mountain or near-mountain areas. Within the mountain counties of Chaffee and Lake, the subdivisions lie mostly along the sides of mountains, but some are along the foothills and in the valleys. Even in the less mountainous counties, there are developments along the foothills descending from the west.

Table 1--Number of lots and lot buyers, by subdivision size group; project area, July 1, 1967 to July 1, 1972

Subdivision size	Subdivisions		Lot buyers	
	Total	Sample	Total	Sample <u>1/</u>
Fewer than 50 lots each	28	19	215	36
50-99 lots each	9	7	245	41
100-1,200 lots each	19	15	1,542	256
10,000 lots or over	2	1	<u>2/</u> 1,006	167
Total	58	42	3,008	500

1/ The sample of lot buyers in each sample block is proportional to the number of lots in that block.

2/ 10% sample of about 10,000 lot owners.

Over 90 percent of the area is used as rangeland for livestock and wildlife. Almost three-fourths of the land is in private ownership, ranging from 96 percent in Las Animas to only 23 percent in Lake and Chaffee Counties.

SOCIOECONOMIC CHARACTERISTICS

Population

The 1970 population of the seven-county area was 182,000--a drop of 1,400 from 1960. This drop occurred primarily in rural areas and towns of fewer than 1,000 people. Population increased in all urban towns except Salida, Trinidad, and Walsenburg in Chaffee, Las Animas, and Huerfano Counties, respectively. Recent projections indicate that populations of all counties except Huerfano will increase by 1980 (table 2). While the projections were based on sophisticated techniques, the procedure did not consider possible immigration of people into recreation-type subdivisions. While these developments will attract a seasonal population, this study revealed that the first buyers and builders expect to be permanent residents. Most of these are salesmen, businessmen, or construction workers who plan to work in this or a nearby subdivision. Given this trend and the appearance of at least 58 new subdivisions in the study area in 1967-72 (mostly since the 1970 Census), the area population may increase considerably more than the projected 17 percent by 1980.

Table 2--Actual and projected populations, survey area

County	Population				
	1970 (actual)	1975 (projected)	1980 (projected)	Change 1970-75	Change 1975-80
	<u>Number</u>			<u>Percent</u>	
Chaffee	10,162	11,642	13,180	14.6	13.2
Custer	1,120	1,295	1,495	15.6	15.4
Fremont	21,942	25,561	29,463	16.5	15.3
Huerfano	6,590	6,437	6,307	-2.4	-2.1
Lake	8,282	8,343	8,473	.7	1.6
Las Animas	15,744	16,832	18,140	6.9	7.8
Pueblo	118,238	127,092	136,513	7.5	7.4
Total	182,078	197,202	213,571	8.3	8.3

Source: (8)

Employment by Industry

Government was the primary source of employment in four of the seven counties (Chaffee, Fremont, Las Animas, and Pueblo) and the second major source in the other three (table 3) (3). Agriculture was the major source of employment in Custer and Huerfano counties. Only Lake County varied from this pattern; almost half of its civilian labor force was employed in mining. Pueblo County, the only SMSA in the project area, was the largest in terms of population and employment.^{3/} Besides government, other important sources of employment were manufacturing and the retail trade. Pueblo is also an important wholesale trade center for nearby counties.

^{3/} A Standard Metropolitan Statistical Area (SMSA) is defined by the Census Bureau as a county or group of contiguous counties (except for New England) which contains at least one central city or twin cities with at least 50,000 population.

Table 3--Industry employment, by county ranking, 1971 1/

Industry	County						
	Chaffee	Custer	Fremont	Huerfano	Lake	Las Animas	Pueblo
	<u>Rank</u>						
Government	1	2	1	2	2	1	1
Agriculture	5	1	5	1	8	2	8
Wholesale and retail trade	2	3	3	3	3	3	3
Services	3	6	2	4	4	4	4
Transportation, communication, and public utilities	4	4	7	5	6	6	5
Manufacturing	8	7	4	7	9	9	2
Contract construction	7	5	8	8	5	7	6
Mining	9	8	6	9	1	5	9
Finance, insur- ance, and real estate	6	7	9	6	7	8	7

1/ Average annual work force. Rank is based on the number of people employed by industry in each county. For example, in Lake County, the mining industry ranks #1 and manufacturing ranks #9.

Source: (3)

INVENTORY OF RECREATION SUBDIVISIONS

The first step of this study was to inventory all recreation subdivisions in the Sangre de Cristo RC&D project area (6). Inventory highlights are summarized below. An exhaustive survey of subdivision plats on file in each subject county was conducted during early 1973. The purpose was to identify all recreation subdivisions platted and approved between July 1, 1967 and July 1, 1972, and record pertinent data on acres subdivided, prices paid, and other related information.

Small subdivisions are defined in this study as those with less than 50 lots, medium are those with 50 to 99 lots, and large are those with 100 to 1,200 lots. Two subdivisions were classified as very large because each contained 10,000 or more lots.

Subdivision activity was the most intensive in the mountain counties of Chaffee and Custer, which had 30 of the 58 subdivisions. These counties also contained half the small subdivisions. The larger ones were found mostly in the front range counties of Fremont, Huerfano, Las Animas, and Pueblo. Large subdivisions are not common in mountain areas primarily because of the small amount of land in private ownership. Terrain is also a factor.

The 58 subdivisions platted over 75,000 rural acres into 45,000 lots in 1967-72. Acres per subdivision ranged from only 4 in a Huerfano County subdivision to over 20,000 for one in Pueblo County. Since the acreage subdivided (75,000 acres) is small compared to the 8 million acres in the project area, location and use is especially important. This is particularly true in mountain counties, where many subdivisions lie in the path of migrating wildlife.

Prices paid for lots are based on average sale price per subdivision in 1972. It was not possible to get a complete accounting of all sales; thus, prices reported should be considered an indication of lot sales instead of exact price quotations.

The lowest price per lot (\$700) was paid in Custer County. Sales were on a small subdivision (38 acres) and for very small lots (0.1 acre) in a built-up area. Lowest price per acre (\$377) was reported in Fremont County from a large subdivision of 2,200 acres. Nine-acre lots sold for \$3,780 each, or \$420 per acre. These two subdivisions carried few of the scenic or other favorable characteristics, such as central water and sewer systems, that would enhance land values.

Only 3 percent of the 29,000 lots sold had dwelling units completed or under construction (table 4). Except for Pueblo County, the small and medium-size subdivisions showed a greater percentage of lots with dwelling units. This may be due to the fact that larger subdivisions are generally sold to people who live at greater distances, while smaller subdivisions are apt to be sold to local people. Residing a long distance from the lot complicates the building of a house or cabin. Also, larger developers are more likely to sell on long-term contracts than smaller developers. Until the lot is paid for, construction of houses or cabins may not be possible. In addition, the large developers have more capital resources to advertise regionally and nationally, resulting in sales to people who live farther away and who may never have seen the lots until they buy. Until they have a chance to visit their property, they are not likely to build.

RESULTS OF ERS SURVEY OF LOT OWNERS

The survey phase of this study obtained sample information on family characteristics, lot characteristics, immigration, visitation, building

Table 4--Subdivision lots sold and lots with dwelling units

County	Subdivisions	Subdivision lots			Dwelling units	
		Total	Sold	Percent sold	Total	Percent of lots sold <u>1/</u>
		-----Number-----		Percent	Number	Percent
Chaffee	12	325	179	55	49	27
Custer	18	2,128	1,201	56	101	8
Fremont	8	1,764	364	21	47	13
Huerfano	9	3,050	826	27	112	14
Lake	1	62	45	73	11	24
Las Animas	5	1,662	453	27	58	13
Pueblo	5	36,116	26,142	72	614	2
Total	58	45,107	29,210	65	992	3

1/ Total dwelling units divided by lots sold.

intentions, and satisfaction with lot purchases, among other factors. Impacts of lot owner expenditures in the project area, as well as demands on selected public services such as education, police and fire protection, and road expenditures, were also estimated. The following sections present profiles of lot owner characteristics as well as impacts of expenditures and demands of survey lot owners in the project area.

Lot Owner Characteristics

Prior to this study, little information had been available on the characteristics of recreation subdivision lot owners. Some of the unknowns are: Who are these people? Are they economically and socially different from the local people? Where do they live? Some of these questions have been cleared up with this study. Subdivision lot owners are not too different from Colorado residents in general. The main difference is a slightly higher economic status of the outsiders.

The following is a profile of typical lot owners surveyed in this study:

Male ----- 92 percent

Age (bimodal distribution)	
25-34 years-----	28 percent
45-64 years-----	42 percent
Occupation (professional or managerial)-----	60 percent
Live out of State-----	54 percent
Household income (\$10,000-\$24,999)-----	72 percent
Mean household income-----	\$17,055
Proportion in labor force-----	93 percent
Typical ownership pattern (single owner of single lots)--	72 percent

Age of survey lot owners (heads of household) appears to follow a bimodal pattern that falls within the more productive age groups. The State exhibited the same bimodal pattern.

A higher proportion of survey heads of households (92 percent) were in the labor force, compared with the State (75 percent) (table 5). Unemployment was also lower for the survey households. The proportion of professional, technical, and kindred workers was two and a half times that for the State (app. table 1). Only 8 percent of household heads were female. They held occupations similar to their male counterparts, except for a higher proportion in clerical occupations.

Table 5--Employment status of survey head of household and State population

Category	Survey head of household, 1973		State, 1970 <u>1/</u>	
	Number	Percent	Number	Percent
Armed Forces	24	8	47,406	6
Civilian labor force	267	85	539,295	69
Employed	265	84	517,373	66
Unemployed	2	1	21,922	3
Total in labor force	291	92	586,701	75
Not in labor force	24	8	197,431	<u>3/</u> 25
Total	<u>2/</u> 315	100	784,132	100

1/ Males 14 years of age and over. This is reasonably comparable to employed survey heads of households (92% were male).

2/ In addition, 13 did not respond, totaling 328 lot owners.

3/ Students, retired, and disabled.

Source: (12) and ERS survey.

Among survey households, 86 percent received annual incomes of \$10,000 or more, compared with 47 percent for the State (table 6). The State data are taken from the 1970 U.S. Census of Population, and hence are 4 years behind the 1973 survey data on incomes. If the 1970 State mean income of \$11,800 increased an average of 5 percent per year, it would be about \$14,400 for 1973, still some \$3,400 below the mean for survey lot owners. Thus, the higher levels of household incomes, higher level of employment, and a greater share of people in the 25-to-64 age group implies lot owners are a more affluent group than the State average.

Table 6--Annual income of survey and State households

Gross income	Households			
	Survey, 1970		State, 1970	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Less than \$2,000	--	--	26,700	5
\$2,000 to \$4,999	7	2	77,893	14
\$5,000 to \$9,999	37	12	185,889	34
\$10,000 to \$24,999	222	72	233,135	43
\$25,000 and over	44	14	23,549	4
Total	2/ 310	100	547,165	100
	<u>Dollars</u>		<u>Dollars</u>	
Mean income <u>1/</u>	17,765		3/ 11,843	

-- = None

1/ Based on mid-points of income groupings. (The \$25,000-and-over group was assumed to be \$30,000 for estimating mean income.)

2/ In addition, 18 did not respond, totaling 328 lot owners.

3/ If State incomes are assumed to have increased at a rate of 5% a year from 1969 to 1973, the State mean income would be \$14,396 by 1973.

Source: (12) and EKS survey.

For this study, area residents are those people who live within the seven counties of the Sangre de Cristo project area. Only 9 percent of the lot owners were area residents; 37 percent lived outside the area but in the State; and 54 percent lived out of the State (app. table 2). These out-of-State owners traveled an average of 2,100 miles round trip to visit their lots. Although 42 percent of all lot owners visited their lots last year, distance and the increasing costs of travel may lower the visitation rate.

Excluding Colorado, Mountain States accounted for less than 3 percent (5 of 175 lot owners) of out-of-State lot owners (app. table 3). Southern and North-Central States accounted for 81 percent of out-of-State lot owners (141 of 175 lot owners). Las Animas County on the New Mexico border drew mainly from Texas and Oklahoma. Only one lot owner lived in New Mexico. However, more Huerfano County lot owners (15 of 31) came from the North-Central region--primarily Kansas. The same pattern held for Custer and Pueblo, with more people coming from the North-Central region than from the South. Illinois (mainly the Chicago metropolitan area) accounted for 41 of 70 out-of-State owners in Pueblo County. The larger developers may have established regional sales offices in that State.

Chaffee, Fremont, and Lake Counties, located farther into the mountains, attracted a greater share of buyers from Colorado than did counties to the south. Apparently, the highway system did not funnel potential out-of-State buyers into intermountain counties. Perhaps residents of the Denver and Colorado Springs metropolitan areas had more knowledge of the remote subdivisions and lots than non-State residents.

Lot ownership in this study refers to the person or persons controlling or using the lot. A lot was considered owned even though it was mortgaged. Four ownership patterns were defined (app. table 4). The typical tenure pattern was single owners of single lots (72 percent) or multiple lots (17 percent). Although single ownership simplifies decisionmaking in planning and building a house or cabin, the cost of construction would fall on one person. Multiple owners 4/ (10 percent) were not as prevalent as had been expected.

Multiple lot owners purchased an average of three lots (usually adjacent); most of them considered the multiple lots as one unit and intended to use them that way.

Lot Characteristics

The survey of lot owners was conducted in early 1974 and covered people who bought lots in the project area from 1967 through 1972. Prices referred to below are averages for that period. Other lot characteristics were not affected by time as much as prices were during 1967-72. The following is a profile on lot characteristics:

Average purchase price-----	\$5,600
Average size-----	6.9 acres
Percent of lots financed-----	84 percent
Percent financed from developer-----	67 percent
Percent financed within the area-----	25 percent
Average rate of interest-----	8.4 percent
Average repayment period-----	9.4 years

4/ Two or more households.

Initial hypotheses suggested that over three-fourths of all lots sold would be financed and that over half would be financed through the developer. This survey substantiates these hypotheses. The average rate of interest was 8.4 percent. Developers charged about the same rate as financial institutions.^{5/} Average repayment period was 9.4 years (app. table 5). Financial institutions generally permitted a longer repayment period than did developers. Half of the lot owners financed 90 percent or more of the purchase price (app. table 6).

Financial institutions in the area may be missing out on an important source of income. Of the 277 properties financed (app. table 7), only 25 percent of the loans were secured in the project area. Over 29,000 lots have been sold in the entire project area. If these lots were sold and financed similarly to the surveyed lots, at least \$57 million would be paid in interest over a 10-year period. The \$117 million in principal financed represents a substantial increase in capital value of the area's land resources, which were previously used for extensive agriculture. It appears that local financial institutions have not been substantially involved in the subdivision activity and have not capitalized on opportunities for expansion. Developers have first chance at the loans and may be willing to assume greater risk than local institutions.

Locally initiated planning in the area, as contemplated in the RC&D program, may increase the knowledge of local people and institutions, provide some financial advantages to the area, and result in area development more compatible with local objectives and values.

Visitation

During a normal year, 42 percent of the owners visited their lots and stayed an average of 2.8 weeks (app. table 8). The following is a profile that describes these visits:

Owners visiting lots in 1973-----	42 percent
Average length of visit-----	2.8 weeks
Main recreation activities:	
Sightseeing-----	18 percent
Camping-----	16 percent
Fishing-----	15 percent
Average expenditures-----	\$362

Only 3 percent of all lots sold contained a dwelling unit. Visitors either camped in tents or recreation vehicles or stayed in nearby motels or other commercial facilities. This is not too surprising, since most lot owners bought their lots for investment rather than for recreation purposes.

^{5/} Banks, savings & loan associations, credit unions, etc.

Another reason for the low visitation rate may be distance. The average owner lived over 600 miles from his property, and out-of-State owners averaged over 1,000 miles.

Recreation activities of lot owners on or near their property seldom involved capital intensive enterprises (app. table 9). The 1973 visitors participated primarily in sightseeing (18 percent), camping (16 percent), and fishing (15 percent). Another 10 percent engaged in mountain climbing. Surprisingly, winter sports did not rank very high (5 percent) among their activities; however, the more popular winter sports areas of Colorado are much farther north than the project area.

Little change in recreation activities was planned by lot owners for 1973-78. They did plan to double participation in winter sports, although this was still a low priority item. There is an expected indicated increase in total participation, from 817 activities by 202 lot owners to 1,070 activities by 240 lot owners. Whereas 14 percent of all lot owners did not participate in any recreation activities in 1973, only 9 percent indicated they did not plan any participation in the next 5 years. This may be due to the individual owner's expectations of a better economic status. Inflation along with the fuel shortage apparently had some effect in limiting visitation. Thus, local residents can expect an increasing impact on their recreational facilities.

Table 7 shows expenditures in the project area by all survey lot owners in 1973. Average expenditures for all survey lot owners was about \$362. In a later section of this report, the impact of these expenditures on the area will be projected.

Dwelling Units

County assessors and treasurers try to keep detailed records of dwelling units placed on properties in their respective counties, although sometimes a trailer or cabin is placed on a remote subdivision lot without knowledge of these officials. Awareness of these structures is necessary for tax assessment. It is also important that county officials know the rate of development in recreation subdivision lots. For instance, over 45,000 lots have been platted in the project area and over 29,000 were sold in 1967-72. Knowledge of the rate of development of these lots is crucial to county planning. In 1973, slightly over 3 percent of these sold lots contained dwelling units. This was an average of about 200 dwelling units placed on lots per year in 1967-72 for the seven-county project area.

The above data are based on the inventory phase of the study which included a search of records of all subdivisions started between 1967 and 1972 (6). The following profile of dwelling units is based on the mail survey conducted for this study:

Current dwelling units

Survey lots with dwelling units-----	9 percent
Dwelling units were houses-----	50 percent
Dwelling units were cabins-----	33 percent
Average cost per unit-----	\$7,100

Table 7--Expenditures by survey lot owners, 1973

Item	Lot owner expenditures in project area, 1973	
	<u>Number</u>	<u>Dollars</u>
Property taxes	<u>1/</u> 292	16,668
Other expenditures:		
Lot improvement <u>2/</u>	44	68,478
Food	77	13,966
Lodging	29	7,005
Entertainment	26	2,165
Other	67	10,355
Total other	<u>3/</u> 219	101,969
Total	<u>4/</u>	118,637

1/ Lot owners reporting expenditures.

2/ Landscaping and related land improvements, installation of sewer, electrical facilities, new structures, and additions or remodeling of existing expenditures.

3/ Lot owners reporting expenditures on one or more of the above items.

4/ 328 total lot owners.

Planned dwelling units

Survey lot owners plan to build-----	56 percent
Within next 3 years-----	55 percent
Planned units will be houses-----	48 percent
Planned units will be cabins-----	44 percent
Average cost per unit-----	\$15,700

According to this survey, slightly over 10 percent of lot owners responding indicated that their lots contained a dwelling unit (app. table 10). This was somewhat higher than the number of dwelling units reported in the above inventory. Under-reporting of cabins and trailers to county assessors may account for most of this difference.

Considering the past rate of construction based on the inventory and the results of the mail survey, the actual annual rate of construction would be around 6 percent of all lots sold. Applying the 6-percent rate to all lots sold (29,000) implies an annual rate of development of 348 dwelling units for the seven-county area, at the current rates for lot sales and construction.

This contrasts sharply with the building intentions of lot owners surveyed. More than half of lot owners responding to the question (175 of 311) indicated they planned to build or place a dwelling unit on their lots (app. table 11). Planning to build and actually building are quite different. However, since over half of the dwelling units were planned for 1974-76. (app. table 12), intentions may be fairly realistic.

Immigration

Local people planning for the growth of the project area have raised legitimate questions concerning the effects of lot purchases in recreation subdivisions. Some questions concern the number of people planning to move into the area and when; the number of people planning to build and the planned use of the building; and the work activities planned after moving into the area. A total of 103 of 316 survey lot owners plan to migrate into the area (app. table 13).^{6/} Only 40 of the planned immigrants indicated the year of migration (app. table 14); however, half of these lot owners expect to move during 1974-78.

The following is a profile of the lot owners surveyed:

Percent of survey lot owners planning to	
move into area-----	33 percent
Immigration planned within 5 years-----	50 percent
Proposed immigrants living out-of-State-----	88 percent
Proposed immigrants will retire-----	50 percent
Proposed immigrants will look for new	
employment-----	38 percent
Proposed immigrants are professionals-----	33 percent
Average number of school-age children	
at home-----	1 child
Average age of head of household-----	45 years
Proposed immigrants' income, \$10,000-\$25,000-----	80 percent

As stated earlier, over half of all lot owners lived outside the State. One hypothesis of this study was that Colorado-born lot owners would have a greater tendency to migrate back to these recreation subdivisions than would lot owners born elsewhere. However, the tendency to immigrate was about equal (app. table 13) for both groups.

Immigrants had 106 (42 + 64) children living at home at the time of the survey (app. table 14). Only 40 lot owners indicated the year they planned to move. By expanding the age of children 18 years old and younger from this group to the year immigration is anticipated, about 30 children are expected to move into the area. No allowances were made for children who may leave home, or for new additions to the family.

^{6/} Twelve did not respond.

Although 59 percent of the potential immigrants plan to retire when they move into the area, another 28 percent will look for new employment (app. table 15). Most of these are now professionals, either civilians or in the Armed Forces. There is no way of knowing whether they will seek or be able to find similar employment in the area.

Current gross household income of planned immigrants was lower than non-migrants and both were above the State average. The average income in 1973 was \$16,242 for immigrants, \$18,701 for nonmigrants, and an estimated \$14,396 for the State.

In summary, the typical immigrant was 45 years of age at the time of the survey, plans to move into the area in 1974-78, is professionally oriented, and earns more than \$16,000 per year. He or she will move into the area primarily to retire, but 28 percent will look for new employment.

Lot Owners' Evaluation of Purchase

Before this study was begun, it was hypothesized that the typical lot owner lived out of the State, bought his lot sight-unseen, and would be dissatisfied with his purchase. Numerous magazine and newspaper articles have fostered the notion of the unsuspecting lot buyer at the mercy of the unscrupulous salesman. However, this survey indicates that most buyers exercised a considerable degree of caution and were generally knowledgeable, though in many instances, the stereotype lot salesman was still present.

The following is a profile of all lot owners surveyed:

Survey lot owners dissatisfied-----	24 percent
Main reason for dissatisfaction was that	
lot had not increased enough in value-----	53 percent
Investment was main reason for buying-----	54 percent
Owners saw lots before buying-----	88 percent
Buyers heard of their lots from friends or	
relatives-----	54 percent

Satisfaction with lot purchase was much higher than expected (app. table 16). The major reason for dissatisfaction was that they thought lot price had not increased enough (app. table 17). This is not too surprising since the main reason for buying was for investment (app. table 18). Another important reason was that the lot was too far from home (42 percent). The fuel shortage and the ensuing rise in gasoline prices may have affected the use of the properties. A third of the dissatisfied lot owners indicated that the developer or salesman had not provided services or facilities as promised. This may be the case of salesmen promising more than they could deliver. This could also be related to the fact that lot values have not increased in value as anticipated. These reasons give credence to the notion that in order to sell lots some salesmen are promising quick returns on investment and more services than they can provide.

Eighty-eight percent of survey lot buyers saw their lots before buying (app. table 16) and the proportion was higher for the satisfied owners than for dissatisfied owners. Advertising was the main source of knowledge for 27 percent of the owners--about the same for dissatisfied and satisfied owners--and 11 percent first saw their lots while passing through the area.

There was a higher level of satisfaction with lot purchases in the smaller subdivisions than in the larger ones (app. table 19). Lots in small subdivisions are generally bought by people living closer to the project, who probably have more knowledge of the area. Also, owners from the very large subdivisions bought their lots primarily for investment (the main reason for dissatisfaction), while the owners in the smallest subdivisions were more interested in land for a recreation or retirement home (app. table 20).

PRIVATE STUDY OF ONE SUBDIVISION

One very large subdivision did not participate in our sample survey because its own survey was underway (11). This subdivision is a planned city, with an intended balance among recreation, employment, and residence. Appendix table 21 compares selected characteristics of the two surveys, explaining differences where data were not directly comparable. For instance, age and occupation were reported for both husband and wife in the related study, while the same characteristics were gathered only for the head of household in the ERS study. Differences were rather prominent for occupations. Since the related study included both husband and wife, the proportion employed as professionals and administrative workers proportion was about half of those for the ERS survey. The fact that over half of the lot owners in the related study had employed wives may help account for the higher level of household income for this group. Seventy-nine percent of the families in the related study received over \$12,000 annual income, while 86 percent of the lot owners in the ERS study received over \$10,000.

Another major difference pertains to the number of lot owners planning to move into the subdivision. Some 76 percent of the lot owners in the related survey plan to move into the subdivision, compared with only 33 percent for the ERS survey subdivisions. The same relationship holds for the number of owners planning to use their properties for permanent residence.

In summary, while both surveys involved subdivisions selling properties primarily to non-Colorado residents, the subdivision described in the private study clearly is being used as a place of permanent residence, either through relocation of employment or retirement. Lot owners in the ERS survey bought their properties primarily for investment purposes and lastly for permanent residence. In light of these and other factors, no more than half of the subdivided land in the ERS survey will likely be urbanized or built up to any significant degree, while the related study subdivision will likely be entirely urbanized.

IMPACTS OF SUBDIVISIONS ON LAND USE

A major concern of people involved in community planning is the effects of recreation subdivisions on land use in the short and long run. The major share of the 75,000 acres of subdivided land had previously been used as rough open, or woodland grazing (table 8). Quality of grazing probably was not better than 30 to 60 acres per cow. None of the land was originally urban, although one large subdivision was near the city of Pueblo. Between 1967 and 1972, the greatest land use change was the increase in urban or built-up areas (2,483 acres) shifting primarily from open and woodland grazing land (2,419 acres). The next largest shift (43 acres) was from wooded nongrazing land.

Table 8--Estimated land use changes resulting from subdivision development

Land use	Without development (1967)	With development (1972)	Change 1967- 72	Expected change (1967-82) <u>1/</u>
	<u>Acres</u>			
Woodland (nongrazing)	278	235	-43	-139
Cropland	745	724	-21	-600
Pasture:				
Open grazing	52,009	50,446	-1,563	-40,655
Woodland grazing	22,370	21,514	-856	-11,266
Urban and built-up	0	<u>2/</u> 2,483	+2,483	+52,660
Total	75,402	75,402	--	--

-- = Not applicable.

1/ It was assumed that 50% of subdivided land in all counties except Pueblo would be urbanized by 1982. Since Pueblo County is an SMSA and most of the subdivided land is near a major town, it was assumed that all of the subdivided land would eventually be urbanized or built-up.

2/ Urban use based on proportion of lots with dwelling units.

Source: District conservationists, Soil Conservation Service; ERS study.

Longrun changes are based on the assumption that only half of all subdivided lots in all counties except Pueblo would eventually contain dwelling units. This assumption is based on the fact that 56 percent of the lot owners surveyed intended to place a dwelling unit on their property. Since Pueblo County is an SMSA and most of the subdivided land is near a major

town, it was assumed that all of the subdivided land would eventually be urbanized or built-up.

The related private survey in Pueblo County reported that 80 percent of the lot owners surveyed planned to build on their properties, 56 percent within 5 years (11).

During 1967-72, 2,483 acres of once rural land were urbanized or built-up. Eventually, urbanized land is expected to increase to 52,660 acres (see app. table 22 for details). Very little of the subdivided land was taken from prime agricultural lands; most of it was marginal land in terms of productivity. Nonetheless, the subdivided land is important to the area in terms of watershed protection, outdoor recreation, wildlife habitat, and environmental impacts.

ECONOMIC IMPACTS OF SUBDIVISIONS

Limited data on subdivisions and lot owners prevented a regional benefit-cost analysis of subdivision activity. Little information was available on initial expenditures by the 58 subdividers for the purchase and development of the project area land. On the demand side, many costs were difficult to attribute directly to subdivision lot owners; for example, every land title processed in county courthouses involves costs in time, labor, legal expense, equipment, supplies, and use of buildings. However, data were obtained on major items of expenditures by survey lot owners and demands by them on selected local services. Expenditures were gathered for development and nondevelopment items, and demands were estimated for primary and secondary education, rural police and fire protection, rural roads, and bridge maintenance.

No attempt was made to measure gross income multipliers associated with subdivision development. However, a recent study by Rohdy and Lovegrove (9) considered the economic impact of hunting and fishing in Grand County, Colorado, in 1968. Total multipliers were estimated for a 10-sector model, including households. There appears to be enough similarity between the two studies to warrant the use of these multipliers. In cases where specific multipliers were not available, the average for all sectors was used.

Development Expenditures

The survey yielded data on development expenditures by lot owners including cost of purchasing or building dwelling units, lot improvements, and interest paid on lot financing (table 9). Purchase price of lots was excluded as an impact, since this is a change in the form of assets from land to money, rather than an increase in expenditures. The interest charged for financing lots represents an additional service or output by the lending institution.

Thirty of 328 survey lot owners reported having dwelling units on their properties during 1967-72. Expenditures averaged \$69,750 annually. It was assumed that all expenditures on dwelling units were made in the project area, as the area covers seven counties and has several major trade centers that could supply all materials and labor. Given a multiplier of 2.36 (9) and the \$69,750 spent on dwelling units, the annual impact in the project area is \$164,610 (\$502 per lot owner).

Table 9--Selected development expenditures of survey lot owners, 1967-72

Development expenditures	Survey lot owners									
	Owners with expenditures		Total expenditures		Spent in area		Total		Annual impact on area	
	Number	-----Dollars-----	Over 5 years	Per year	Share 1/	Amount	multiplier 2/	328 survey lot owners	Per lot owner	
Dwelling units	30	348,750	69,750	1.00	69,750	2.36	164,610	502		
Interest paid on lot financing 3/	230	115,624	23,125	.25	5,781	3.14	18,152	55		
Lot improvement	44	68,478	13,696	1.00	13,696	2.36	32,323	99		
Project area	--	532,852	106,570	--	89,227	--	215,085	656		

-- = Not applicable.

1/ All expenditures for dwelling units and lot improvements were assumed to be spent in project area. Also, one-fourth of lots were financed within the project area.

2/ From source (9).

3/ 8% interest equals service performed by lending institutions.

Another development expenditure involves loan financing. Survey lot owners paid \$115,624 in interest on loans over 5 years, or \$23,125 per year. According to the mail survey, however, only one-fourth of these loans were obtained through local lending institutions. The annual area expenditures then would be \$5,781. With a multiplier of 3.14, the annual impact on the project area would be \$18,152 (\$55 per lot owner).

The final development expenditure involved lot improvements. This is a broad category and includes additions to or improvements in existing housing, other buildings, fencing, and land improvements. Only 44 of 328 survey lot owners reported expenditures on these items. This amounted to \$13,696 annually. Assuming a multiplier of 2.36, total annual impact becomes \$32,323, or \$99 per lot owner.

Aggregated expenditures for the above three development items shows a total annual impact by survey lot owners of \$215,085 (\$656 per lot owner).

Nondevelopment Expenditures

Nondevelopment expenditures included such items as food, entertainment, lodging, and taxes (table 10). By definition, all nondevelopment expenditures were made in the project area. Annual nondevelopment expenditures of \$50,159 produce a total impact on the project area of \$11,849 or \$341 per survey lot owner.

Total impact of development and nondevelopment expenditures in 1973 was \$326,934 (table 11). Assuming that survey lot owners were representative of the region, every lot sold would produce an expenditure impact of \$997, taking into account the multiplier effects on expenditures. The \$997 impact times 29,210 lots sold in the project area produces an estimated impact of over \$29 million. According to the U.S. Census Bureau's 1972 County and City Data Book, there were \$31,385 in retail sales and \$116,352 in wholesale sales per person employed in these two economic sectors of Colorado. Dividing the retail and wholesale sales per employee into the \$29 million in area sales would have the equivalent effect of increasing retail and wholesale jobs in the area by 915 and 250, respectively.

Demands for Public Services

Survey lot owner demands for rural police and fire protection, rural road operation and maintenance, and primary and secondary education were estimated. Although lot owners have other demands on the county, these appear to be the major categories.

The previous section on expenditures was based on the sample mail survey of 328 lot owners conducted for this study. Data on demands by lot owners in this section were based on total lots sold in the project area (29,210). Data on the number of houses on lots, miles of subdivision roads, and subdivision children in local schools were taken directly from county sources rather than the mail survey.

Table 10--Selected nondevelopment expenditures of survey lot owners,
and impact on area, 1973

Annual expenditures	Survey lot owners				
	Owners with expendi- tures	Annual expendi- tures	Total multi- plier <u>1/</u>	Impact on area	
				Total expendi- tures	Average for survey lot owners <u>2/</u>
	<u>Number</u>	<u>Dollars</u>	<u>Number</u>	<u>Dollars</u>	
Food and entertainment	77	16,131	2.18	35,166	107
Lodging	29	7,005	2.19	15,341	47
Taxes	292	16,668	<u>3/</u> 2.27	37,836	115
Other	67	10,355	<u>3/</u> 2.27	23,506	72
Total	--	50,159	--	111,849	341

-- = Not applicable.

1/ From source (9).

2/ Total expenditures divided by 328 lot owners.

3/ Average for all sectors.

Table 11--Summary of survey lot owners' annual expenditures, 1973

Expenditure	Total	Average per lot owner <u>1/</u>
		<u>Dollars</u>
Development	215,085	656
Nondevelopment	111,849	341
Total	326,934	997

1/ Average for 328 lot owners (including multiplier).

Source: Table 9 and 10.

Public Safety

Data were not available that would permit measurement of the actual cost of a survey dwelling unit on rural police and fire departments' budgets. Many subdivisions and dwellings are scattered in remote areas. Also, demand for police and fire services depends greatly on the use of the property. The procedure used in this study was an imputed cost approach. That is, the average cost for all rural housing units in the area for police and fire protection was assumed to be the same for survey subdivision housing units. This procedure may appear to overestimate the demand for these services by survey lot owners. On the other hand, the cost of servicing remote housing units will exceed the per visit cost for more densely populated areas.

Expenditures for public safety varied somewhat by county, depending on revenues available and services provided (app. table 23). Annual costs attributed to 992 survey subdivision dwelling units in the project area totaled \$45,420 in 1973; 72 percent was for Pueblo County.

Rural Roads

Operating and maintenance costs for survey subdivision roads were estimated in the same manner as the demands by subdivision houses on public safety expenditures in the previous section. Total miles of survey subdivision roads as estimated from subdivision plats were 888 miles in the 58 recreation subdivisions. Most of these roads are developed although not necessarily up to county standards. It is assumed that the roads will eventually meet minimum county standards and will be maintained on a level comparable to other rural county roads. Given this assumption, the imputed total cost of survey subdivision roads in the project area was \$538,778; 72 percent of it in Pueblo County (app. table 24).

Educational System

Each public school district was checked for the number of school children from the 58 survey recreation subdivisions attending district schools. The number was estimated at about 410 students, kindergarten through 12 grades. Multiplying the number of subdivision students times annual expenditure per average daily attendance in the respective districts gave a total of \$442,650, 94 percent for Pueblo County alone (app. table 25).

Total Demands for Major Public Services

Total demands or imputed costs of public safety, road and bridge operation and maintenance, and primary and secondary education were estimated at \$1,026,848 in 1973, or \$35 per lot sold (table 12). This falls far short of the estimated total expenditures by lot owners who were surveyed by mail questionnaire and discussed in the previous section. Differences may be due to the fact that data on expenditures were obtained directly by questionnaire from lot owners and are perhaps more complete. On the other hand, demands by lot owners had to be estimated from secondary sources and for only three public services (public safety, education, and road service). Capital expenditures for equipment, buildings, or new road construction were not included since these

Table 12--Cost of supplying major public services to survey subdivisions, 1973

Services	Annual costs <u>1/</u>	
	Total	Average cost per lot sold <u>2/</u>
	<u>Dollars</u>	
Primary and secondary education <u>3/</u>	442,650	18
Rural police and fire protection <u>4/</u>	45,420	2
Road and bridge operation and maintenance <u>5/</u>	538,778	18
Total	1,026,848	35

1/ For all survey subdivisions in project area.

2/ Total cost divided by 29,210 lots sold.

3/ Based on 410 survey subdivision children.

4/ Based on 992 survey subdivision dwelling units.

5/ Based on 888 miles of roads.

Source: County audit reports and app. tables 23, 24, and 25.

are periodic rather than annual purchases. Also, a share of the general administrative costs for operating the county government should be imputed to subdivision lot owners.

Some important observations can be made concerning the wide variations between demands and expenditures of subdivision lot owners. In the early stages of development, expenditures by lot owners generally exceed demands for major county services. Visitors to subdivision lots spend money in the area through food purchase, lodging, recreation, and taxes, while demanding little in terms of schools, public safety, and roads. However, as subdivisions become more fully developed, demands for public services will increase. Only then can the total economic, as well as environmental, impact of recreation subdivisions be determined.

ENVIRONMENTAL IMPACTS

Urbanization of rural lands, although not necessarily large in terms of acres subdivided, has a very pervasive effect on the ecosystem. As new roads, houses, or cabins are constructed, plant life in these areas is disturbed or destroyed. Daily and seasonal movements of wildlife may be impaired or totally blocked. Displaced animals are forced to compete for food and space on adjacent habitat areas which might be fully occupied by the same or other species. Even the best planned subdivisions have some harmful effects on a fragile environment.

Impacts on Animal Wildlife

Mammal extinctions occurred at the rate of about one species or subspecies every 5 years prior to 1800. Since that time, the pace has increased to about one a year. The rate probably will accelerate in the years ahead unless we dedicate our minds and resources to stopping extinctions caused by humans (10).

One factor in increasing the rate of extinctions is the rapid conversion of primitive lands into intensive uses, one of which is subdivisions. When the shift of critical wildlife habitat into recreation subdivisions destroys or alters major production and feeding areas or impairs animal movements, then such economic activities need to be questioned.

The Colorado Division of Wildlife conducted a survey to determine the impact of subdivisions on wildlife on or near lands in the Sangre de Cristo RC&D project area.^{7/} Employees of the Division of Wildlife who were familiar with subdivision locations appraised the varied effects of subdivision activity on individual species of wildlife. They identified at least 11 different species of wildlife in danger of being completely lost on subdivided land in the project area (app. table 26). These animals are intolerant to human disturbance and will probably be lost or displaced if subdivisions are fully developed. Even if they were able to move to other areas, the pressure from wildlife already present might be more than the displaced animals could endure. Although subdivision of rural lands may not appear to directly damage wildlife, there is a disruptive chain reaction in the life cycle of all animals in the project area. Even the best planned subdivisions interact with wildlife and the environment through this chain-reaction phenomenon.

The most widely affected species observed was the mule deer. Some 37,000 acres in 21 subdivisions in Chaffee, Custer, Huerfano, and Pueblo Counties are inhabited by this species. Although the 37,000 acres involved are only 1 percent of the total area in these four counties, disrupted wildlife must seek new areas for habitat (if suitable areas can be found), thus compounding the problem. Antelope, quail, and wild turkey were also found to be widely affected.

The peregrine falcon and the black-footed ferret are the only species with an official status on the Federal endangered species list that are threatened in the area as a result of subdivision developments. Other species not on any official State or Federal threatened or endangered list, may be threatened or endangered locally (app. table 27). The lynx and ringtail cat, though not an endangered species nationally, may be close to the point of extinction locally, and are being threatened in several subdivisions. The peregrine falcon is found on or near three subdivisions involving 17,000 acres in Fremont, Huerfano, and Pueblo counties. Two subdivisions in Lake and Pueblo Counties may endanger the lynx. The ringtail cat and the black-footed ferret may also be jeopardized by the development of two recreation subdivisions.

^{7/} Based on data obtained by Bob Hoover, land use coordinator, Colo. Div. of Wildlife, Denver, Dec. 1974.

The survey by the Colorado Division of Wildlife identified species of wildlife that will be reduced in number or species that may actually increase as a result of the subdivisions. At least 19 of 58 subdivisions are in the migration paths of deer, antelope, elk, turkey, and small game, and these animals will be forced to seek new migration routes to food, water, and seasonal ranges.

Even though most of the study subdivisions are only partly developed, the existence of roads, a few vehicles here and there, and the intrusion of people is beginning to exert noticeable effects on the wildlife.

Free-roaming dogs are one of the biggest wildlife problems associated with mountain subdivisions. In mountain areas and similar regions of high snowfall, the concentration of big game on limited ranges provides an excellent opportunity for dog predation. Denny (4) did a study in 1973 on the impact of uncontrolled dogs on wildlife and livestock. His study indicated that there were 314 deer, 30 elk, and 4 bighorn sheep killed by dogs in Colorado in 1973. The economic value of livestock losses was even greater.

While no estimate of the impact of dogs on wildlife was attempted for the study area, a check indicated that none of 7 counties and only 1 of the 58 subdivisions placed restrictions on dog movements. Yet employees of the Division of Wildlife, who were familiar with subdivision locations, reported that free-roaming dogs or pets would create wildlife problems on all but four of these subdivisions.

These effects will become more pronounced as the rate of subdivision activity and housing construction increases. Some subdivision of rural land is inevitable and perhaps desirable for the benefit of people. However, there must be some point at which protection of plants and animals overshadows the human benefits.

Impacts On BLM Administered Land

Lands administered by the U.S. Bureau of Land Management (BLM) are intermingled with many mountain subdivisions and seasonal home developments in Colorado, and they receive the brunt of the environmental impacts. Because of BLM's concern, a survey was conducted in August 1972 on the effects of rural subdivisions on BLM-administered lands for five districts in Colorado.^{8/} The Canon City District covers five of the seven counties in the Sangre de Cristo RC&D project area plus two counties (Park and Teller) outside this area. Results of the BLM survey seem appropriate for this study. The survey revealed that 80 rural subdivisions involving some 175,000 acres were located adjacent to BLM-administered lands in the Canon City District. Few of the lots in these developments have been improved and few dwelling units have been constructed there but impacts on adjacent public lands are already significant. Perhaps the greatest impact lies in the change in land use. To date, these changes

^{8/} Much of the following material is based on the report: Subdivisions, National Resource Lands in Colorado, Bur. Land Mgt., Colo. State Off., 1972.

have taken place with only limited involvement of local governmental units and with little heed to State and regional or national interests in these lands and their resources.

Access Roads

The most obvious impact on BLM land stems from road construction across it to subdivisions and seasonal homes. Several roads that were built on public lands without prior authorization are on excessive grades, up steep hills, and through narrow steep canyons. Curves are sharp, and poor drainage and undersized culverts are problems. Rocks and soil are sometimes pushed into streambeds, leaving steep backslopes highly susceptible to erosion.

Timber on access road rights-of-way on public lands has been cut, stacked, and occasionally removed without authorization by or reimbursement to the BLM. Other times, the timber has been pushed aside during construction, and left as breeding sites for forest parasites. During road construction, surfacing material is taken from public lands. These areas are not usually restored and BLM is not reimbursed for the materials.

Solid Waste

Demand for solid waste disposal areas usually come from government entities, especially through county commissioners and city or town officials. No inquiries have been made by subdividers in the Canon City BLM District as to available public domain for solid waste disposal. However, dumping of refuse has been observed near and within older subdivisions with dwellings.

Utilities' Rights-of-Way

Requests have been made and approved for rights-of-way for electrical and telephone lines over public domain to homes and cabins constructed on the study subdivision lots. There seems to be no overall plan by subdividers or utility companies to coordinate these services. About half of the rights-of-way processed in the Canon City District resulted from subdivision demand.

Grazing

Subdivisions and their related activities for the past 4 years have had a profound effect on the grazing administration within the Canon City District Office. Prior to the advent of most of the subdivisions, the Canon City District completed an average of 15 grazing permit transfers per year from 1960 to 1970. Since 1970, the number has risen to 97 per year in the Royal Gorge Area alone. This creates additional paper and field work, causing backlogs and hasty transfers without detailed allotment inspection.

Reassignment of grazing permits is a major problem. Since most subdividers do not qualify for grazing permits, privileges of former owners must be reassigned to surrounding landowners. This involves new range surveys, advisory board meetings, inspection tours, and public meetings, plus the accompanying paperwork that goes with each step.

Some lot owners use adjoining Federal land for livestock grazing. Many lot owners believe that since they are taxpayers, they are entitled to Federal grazing privileges just as ranchers are. This assumption tripled the number of trespass cases between 1971 and 1972 in the Canon City District. Time and money is spent investigating, reporting, and collecting these trespass obligations.

In summary, the Canon City District Office estimates that it takes about 3 man-months per year to handle the business associated with current subdivision developments in their area. The work load will likely increase as subdivision activity continues.

CONCLUSIONS

Information developed in this study points out at least five major areas of concern. Problems relate to land fragmentation, water and sewage disposal systems, changes in land use, environment, and immigration. Such questions are easily raised but solutions are much harder to reach.

Land Fragmentation

Land fragmentation engendered by subdividing large tracts of land into many small parcels can have far-reaching effects on the future control and use of these lands. Control of land use in the Sangre de Cristo RC&D project area has been weakened by the proliferation of primarily absentee owners. Effective conservation programs are hampered by the multiplicity and dispersion of ownership. Reconsolidation of thousands of small tracts of land would be extremely costly even if politically feasible. Before much additional land is subdivided, local people must decide if this constitutes the best use of the land. It will not likely be an either/or situation but a combination of alternative land use patterns that would classify areas suitable for low- and high-density population, recreation, agriculture, forestry, historical, and other uses.

Sewer and Water Facilities

Because of the remoteness of dispersion of most of the subdivision in the area with multiacre lots, central water or sewer systems do not exist and were not usually economically feasible. The fact that only half the survey lot owners plan to build suggests that on-site waste disposal and water facilities will be the dominant systems in the near future. This raises the crucial question of whether the soils can safely handle the many thousands of separate disposal systems. Will there be seepage into underground water supplies or uncontrolled drainage into surface water? The Soil Conservation Service can provide much information on the subject through soil surveys and interpretive analysis. Detailed data can be obtained on suitability of soils for housing foundations and for public and private sewer systems. These and similar tests are essential to the issuance of building permits.

Changes in Land Use

Almost all (99 percent) of the 75,000 acres platted into subdivisions in the study area were formerly grazing land. Although the quality of grazing was generally low, these lands are still critical to the area. Additional significance lies in the protection of the area's watershed, its contribution to outdoor recreation, and its intricate connection with wildlife habitat and natural beauty.

Large urbanized or built-up areas are likely to occur only in Pueblo County. Two factors support this conclusion. The county has sufficient population to be designated a Standard Metropolitan Statistical Area. Two large subdivisions surveyed in this study are highly developed, with many amenities found in large towns and cities. Lot sales and housing construction are expected to be strong for some time. Similar concentration of development is not foreseen in the other counties.

Environmental Effects

An important observation from this study is that even the most carefully planned subdivisions can scarcely avoid impact on wildlife and their habitat. Greenbelts and open spaces within subdivisions cannot compensate for blocked migration routes or disturbance of breeding and feeding grounds. The presence of people and the noise from off-road vehicles create disturbance in an otherwise peaceful environment.

Inmigration

Only 33 percent of the lot buyers plan to move into the project area. Most of the inmigration will occur in Pueblo County. Since most of this movement is expected to occur in the next 5 years, the county should now begin preparations for this influx. Road construction and maintenance will take an increasing share of the county budget. Demands for rural police and fire protection will rise. And the county school system, already operating at capacity, will be pressed to handle more children, and will probably have to expand. Additional tax revenues can be expected from these new residents but these usually lag behind demands for services. Advance planning for providing these needed services could avoid severe overloading of community services and inconveniences for all residents. The counties with slower anticipated growth from inmigration can learn from Pueblo County's performance in handling recreation stimulated by inmigration. This should give them a chance to consider how to cope with rural population growth when it occurs in their areas.

National Significance of Study

The above-mentioned problems have more than local significance since the survey of lot buyers was distributed nationwide. Socioeconomic characteristics of the lot buyers should parallel those of other lot buyers in recreational subdivisions where land was purchased for speculation, retirement, or second homes.

Given the above parallel, other areas experiencing rapid sale of lots may find direction from this study. For instance, if in spite of rapid lot sales, immigration will be gradual, then population pressures on public services and facilities may not be as dramatic as anticipated. This suggests that local governments in areas undergoing rapid subdivision have time to make more refined and economically sound long-range plans rather than being pressured into hastily devised short run programs.

On the negative side, the problems of land fragmentation and dispersion of ownership, environmental effects, and the availability of water and sewer facilities are also of more than local concern. The consequences of irreversible changes in land use as well as the disturbance of ecosystems are national in scope.

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APPENDIX

Appendix table 1--Occupation of employed heads of households,
survey households and State

Occupation	Heads of households employed			
	Survey, 1973		State, 1970 <u>1/</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Professional, technical, and kindred	119	45	87,261	18
Managers and administrators	39	15	63,294	13
Sales	26	10	39,604	8
Clerical and kindred	11	4	35,566	7
Craftsmen, foremen, and kindred	44	17	93,464	19
Operatives	15	6	71,640	15
Laborers, except farm	1	0	29,187	6
Farmers and farm managers	3	1	17,875	4
Farm laborers and foremen	0	0	10,752	2
Service workers	7	3	44,604	9
Private household	0	0	324	0
Total	<u>2/</u> 265	100	<u>3/</u> 493,571	100

1/ Employed male heads of households 14 years of age and over. This is reasonably comparable to employed survey heads of household (92% were male).

2/ In addition, there were 24 military, 4 students, 2 unemployed, 18 retired, 2 disabled, and 13 did not respond, totaling 328 lot owners.

3/ 23,802 additional workers did not report occupations.

Source: (12) and ERS survey.

Appendix table 2--Residence of survey lot owners, 1974

Residence	:	Lot owners		:	Average distance to lot
		<u>Number</u>	<u>Percent</u>		<u>Miles</u>
In area	:	31	9	:	33
In State but out of area	:	121	37	:	165
Out of State	:	176	54	:	1,056
Total	:	328	100	:	<u>1/</u> 614

1/ Weighted average.

Appendix table 3--Regional location of survey lot owners, 1974

Region	County							
	Chaffee	Custer	Fremont	Huerfano	Lake	Las Animas	Pueblo	Total
East-South-Central			1					1
South Atlantic		4	1	1		2	4	12
West-South-Central	2	6	3	10		15	8	44
Total South	2	10	5	11		17	12	57
Mountain 1/		1		2		1	1	5
Pacific		7	2	3		2	6	20
Total West		8	2	5		3	7	25
East-North-Central		9	2	4			46	61
West-North-Central		5		11		4	3	23
Total North-Central		14	2	15		4	49	84
New England		2				1		3
Mid-Atlantic		2					1	3
Total Northeast		4				1	1	6
Canada		2					1	3
Total out-of-State owners	2	38	9	31		25	70	175
Colorado	3	62	22	6	6	19	34	152
Total lot owners	5	100	31	37	6	44	104	2/ 327

1/ Excludes Colorado. See separate item.

2/ One lot owner did not report State residence.

Appendix table 4--Ownership patterns, by number of lots and lot owners

Ownership patterns	Lots		Owners	
	Number	Percent	Number	Percent
Single owners--single lots	232	53	232	72
Single owners-multiple lots	161	37	55	17
Multiple owners-single lots	24	5	24	7
Multiple owners-multiple lots	22	5	10	3
Total	<u>1/</u> 439	100	<u>2/</u> 321	100

1/ Of 454 survey lots, 15 did not respond.

2/ In addition, 1 did not know and 6 did not respond totaling 328 lot owners.

Appendix table 5--Repayment period of loan on properties financed by survey lot owners, 1967 to 1972

Repayment period (years)	Property financed	
	Number	Percent
Less than 5	15	7
5-9	82	40
10-14	106	52
Over 15	2	1
Total	<u>1/</u> 205	100

1/ In addition, 33 paid cash, 1 won in a contest, 1 was a gift, and 88 did not respond or did not know, totaling 328 lot owners.

Appendix table 6--Properties financed by survey lot owners

Percent of purchase price financed	Properties	
	<u>Number</u>	<u>Percent</u>
.1 - 49.9	4	1
50.0 - 59.0	8	4
60.0 - 69.9	6	3
70.0 - 79.9	26	14
80.0 - 89.9	50	27
90.0 and over	93	50
Total	<u>1/</u> 187	100
Weighted average	.83	--

-- = Not applicable.

1/ In addition, 33 paid cash, 1 lot was a gift, 1 was won in a contest, 2 did not know, and 104 owners did not respond, totaling 328 lot owners.

Appendix table 7--Source of financing for survey lots

Source of financing	Lots	
	<u>Number</u>	<u>Percent</u>
In area	70	25
Out of area	22	8
Developer	185	67
Total	<u>1/</u> 277	100

1/ In addition, 33 paid cash, 1 lot was won in a contest, 1 was a gift, and 16 owners did not know, totaling 328 lot owners.

Appendix table 8--Visits by lot owners and length of stay, 1973

Number of lot owners	:	Weeks spent on property during a normal year
	:	
	:	
		<u>Weeks</u>
57		<u>1/</u> 1
30		2
7		3
9		4
4		5
5		6
2		7
3		8
1		9
1		10
2		12
1		20
1		25
1		26
Total visits <u>2/</u> 124		--
Total visitor weeks		<u>3/</u> 347

-- = not applicable

1/ One week or less (assumed to be .5 week).

2/ In addition, 174 others spent no time in the area, 8 lived nearby, 1 did not know, and 21 did not respond, totaling 328 lot owners.

3/ Number of owners times weeks stayed in area.

Appendix table 9--Participation of lot owners in recreation activities

Activity	Participation by all lot owners			
	1973		Plans for 1974-78	
	No.	Pct.	No.	Pct.
Sightseeing	149	18	166	16
Camping	129	16	162	15
Fishing	121	15	172	16
Mountain climbing	80	10	99	9
Hunting	46	6	78	7
Winter sports	44	5	117	11
Horseback riding	40	5	89	8
Golf	39	5	78	7
Water sports	32	4	74	7
Other	24	3	26	2
None of the above	113	14	9	1
Total family participation	<u>1/</u> 817	100	<u>2/</u> 1,070	100

1/ In addition, 13 lot owners did not respond. Multiple responses were allowed.

2/ 9 lot owners did not know, and 70 did not respond. Multiple responses were allowed.

Appendix table 10--Type of structure on lot, by size of subdivision

Structure now on lot	Size of subdivision				Total
	Small	Medium	Large	Very large	
			<u>Number</u>		
House	6	2	5	2	15
Cabin	2	1	7		10
House trailer			5		5
Other			3		3
None	13	27	150	99	289
Total	21	30	170	101	<u>1/</u> 322

1/ In addition, 6 did not respond, totaling 328 lot owners.

Appendix table 11--Type of structure planned

Structure planned	Lot owners planning to build	
	<u>Number</u>	<u>Percent</u>
House	77	48
Cabin	70	44
House trailer	7	4
Other	6	4
Total	<u>1/</u> 160	100

1/ In addition, 136 did not plan to build, 15 plan to build but did not know type of structure, and 17 did not respond, totaling 328 lot owners.

Appendix table 12--Year survey lot owners plan to build

Year planning to build	Lot owners	
	Number	Cumulative percent
1974	21	21
1975	19	40
1976	14	54
1977	7	61
1978	7	68
1979	9	77
1980 or later	21	98
Total	<u>1/</u> 98	100

1/ In addition, 136 did not plan to build, 76 planned to build but did not know the year, and 18 did not respond, totaling 328 lot owners.

Appendix table 13--Lot owners, State of birth, and plans to move into project area

Plan to move into project area	State of birth				Total	
	Colorado		Other States			
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Yes	12	31	91	33	103	33
No	27	69	186	67	213	67
Total	39	100	277	100	<u>1/</u> 316	100

1/ In addition, 12 did not respond, totaling 328 lot owners.

Appendix table 14--Survey lot owners planning to move into project area,
and number of children

Year planning to move into area	Lot owners moving into area		Present number of children at home		Number of children at home at time of move <u>1/</u>	
	Number	Percent <u>2/</u>	Number	Percent <u>2/</u>	Number	Percent <u>2/</u>
1974	6	15	7	17	5	17
1975	4	25	2	22	2	24
1976	6	40	6	36	6	44
1977	2	45	4	46	2	51
1978	3	53	4	56	3	61
1979	4	63	2	61	1	64
1980-84	10	88	12	90	11	101
1985 or later	5	100	5	102		101
Total	<u>3/</u> 40	100	42	102	30	101

1/ Children's present age expanded to year moving into area. Children over 18 years of age at time of move were excluded. No new children were anticipated.

2/ Percentages are cumulative. Percentages may not add to 100 due to rounding.

3/ 63 additional lot owners did not indicate year they plan to move into the area. These lot owners had a total of 64 children living at home.

Appendix table 15--Work activities of survey lot owners planning to move into area

Planned work activities	Number	Percent
Keep old job	7	7
Look for new job	27	28
Retire	57	59
Disabled	5	5
Total	1/ 96	100

1/ In addition, 2 did not know and 5 did not respond, totaling 103 lot owners planning to move into the project area.

Appendix 16--Owner's attitude toward lot purchase, by selected characteristics

Item	Survey lot owners					
	Total		Dissatisfied		Satisfied	
	No.	Pct.	No.	Pct.	No.	Pct.
Heard of subdivision through:						
Mail	14	4	5	6	9	4
Magazine or newspaper	73	23	18	23	55	23
Passing through area	35	11	4	5	31	13
Friend or relative	173	54	42	55	131	54
Other	24	8	8	10	16	7
Total	<u>1/</u> 319	100	77	100	242	100
Saw lot before buying:						
Yes	283	88	60	78	223	91
No	38	12	17	22	21	9
Total	<u>2/</u> 321	100	77	100	244	100

1/ In addition, 9 did not respond or did not know, totaling 328 lot owners.

2/ In addition, 7 did not respond or did not know, totaling 328 lot owners.

Appendix table 17--Owner's dissatisfaction with lot purchase, by selected characteristics

Reason for dissatisfaction	Response of 77 dissatisfied lot owners	
	Response <u>1</u> /	Frequency of response <u>2</u> /
	<u>Number</u>	<u>Percent</u>
Lot has not increased enough in value <u>3</u> /	41	53
Lot too far from home	32	42
Developer failed to provide services or facilities	25	32
Lot too expensive	19	25
Utilities too expensive	9	12
Soil problems <u>4</u> /	6	8
Lot too small	5	6
Excessive depth to ground water	4	5
Taxes too high	3	4
Other	5	6
Total	149	--

1/ Multiple responses were permitted.

2/ Percent based on 77 dissatisfied lot owners.

3/ 3 lot owners indicate they could not resell their lots.

4/ For example: soil unsuitable for sewer systems or building sites, erosion problems, steep slopes, potential flooding.

Appendix table 18--Owner's attitude toward lot purchase, by reason for buying

Satisfied with purchase	Total lot Owners	Reason for buying lot <u>1</u> /						Total responses	
		Permanent or retirement home		Recreation or second home		Investment			
	<u>No.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>
Yes	245	49	79	95	85	148	72	292	77
No	77	13	21	17	15	57	28	87	23
Total	<u>2/</u> 322	62	100	112	100	205	100	379	100

1/ Multiple responses were permitted.

2/ In addition, 6 did not respond or did not know, totaling 328 lot owners.

Appendix table 19--Owner's satisfaction with lot purchase, by size of subdivision

Satisfied with lot	Size of subdivision								Total	
	Small		Medium		Large		Very large			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.		
Yes	23	96	21	72	135	80	67	66	246	76
No	1	4	8	28	33	20	34	34	76	24
Total	24	100	29	100	168	100	101	100	<u>1/</u> 322	100

1/ In addition, 1 did not respond and 5 did not know, totaling 328 lot owners.

Appendix table 20--Owner's reason for lot purchase, by subdivision size

Subdivision size	Total lot owners	Reason for purchase <u>1/</u>						Total responses	
		Permanent or retirement home		Recreation or second home		Investment			
	<u>No.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>	<u>No.</u>	<u>Pct.</u>
Small	24	4	13	17	57	9	30	30	100
Medium	30	7	17	18	44	16	39	41	100
Large	171	38	18	77	37	95	45	210	100
Very large	103	14	13	4	4	89	83	107	100
Total	328	63	16	116	30	209	54	388	100

1/ Multiple responses were permitted.

Appendix table 21--Lot owner's characteristics, private
related survey and ERS survey

Lot owner characteristics	Related private survey, 1973	ERS survey 1967-72
		<u>Years</u>
<u>Family characteristics</u>	<u>1/</u> 43	45
		<u>Number</u>
Age	3.5	3.1
		<u>Percent</u>
Family size		
Occupation: <u>2/</u>		
Professional and administrative	18	49
Other	80	46
Retired	2	5
Gross family income over \$12,000	79	<u>3/</u> 86
<u>Origin of lot owners</u>		
Western States	19	54
North Central States	63	26
Other	18	20
<u>Use of residence as permanent home</u>	85	16
<u>Immigration</u>		
Plan to move into subdivision	76	33
Within 3 years	28	40
Within 5 years	54	52
Plan to build in subdivision <u>4/</u>	80	56
Within 3 years	28	55
Within 5 years	56	69
<u>Visitation</u>		
Yes	45	42
No	55	58
<u>Recreational preference</u>		
Fishing and boating	38	23
Hunting	16	7

1/ Average age of husband and wife.

2/ Occupation includes both husband and wife for the related survey only.

3/ \$10,000 or over.

4/ Plan to build whether or not the owners plan to move there.

Source: ERS survey and (11).

Appendix table 22--Land shifted to urban and built-up areas, by county

County	Total acres subdivided	Urban and built-up land <u>1/</u>	
		1967-72 <u>2/</u>	Long run <u>3/</u>
		<u>Acres</u>	
Chaffee	928	139	464
Custer	14,132	707	7,066
Fremont	10,436	313	5,218
Huerfano	11,988	480	5,994
Lake	39	7	20
Las Animas	7,962	239	3,981
Pueblo	29,917	598	29,917
Total	75,402	2,483	52,660

1/ No subdivided land was formerly urban or built up.

2/ Based on proportion of lots with dwelling units.

3/ It was assumed that 50% of subdivided land in all counties except Pueblo will be urbanized or built up eventually. Since Pueblo County is an SMSA, and most of the subdivided land is near a major town, it was assumed that all land in the county would be urbanized or built up.

Source: County subdivision plats, and ERS survey.

Appendix table 23--Impacts of survey subdivisions on county expenditures for public safety, 1973

County	Rural dwellings		Survey subdivisions		
	Total 1/	Average expenditures per dwelling unit 2/	Dwelling units	Annual costs attributed to subdivision dwelling units 3/	
	Number	Dollars	Number		Dollars
Chaffee	2,200	30	49		1,470
Custer	935	13	101		1,313
Fremont	2,390	49	47		2,303
Huerfano	1,225	34	112		3,808
Lake	1,485	88	11		968
Las Animas	2,010	52	58		3,016
Pueblo	7,870	53	614		32,542
Project area	18,115	4/ 49	992		45,420

1/ Rural housing units are based on 1960 to 1970 trends, with necessary adjustments.

2/ Total expenditures for public safety divided by number of rural housing units.

3/ Expenditures per dwelling unit times survey subdivision dwelling units.

4/ Average from populations. Weighted average based on sample would be \$45.97.

Source: County budgets, (5) and (13) and ERS survey.

Appendix table 24--Cost of survey subdivision roads, by county

County	County roads			Survey subdivision roads	
	Miles	Operating and maintenance cost <u>1/</u>	Average cost per mile <u>2/</u>	Miles <u>3/</u>	Cost attributed to subdivision roads <u>4/</u>
	<u>Number</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Number</u>	<u>Dollars</u>
Chaffee	500	364,970	730	7	5,110
Custer	350	163,989	469	24	11,256
Fremont	850	575,664	677	112	75,824
Huerfano	790	315,447	399	90	35,910
Lake	185	314,420	1,700	1	1,700
Las Animas	1,910	598,190	313	67	20,971
Pueblo	1,600	1,058,381	661	587	388,007
Project area	6,185	3,391,061	<u>5/</u> 548	888	538,778

1/ Excludes new construction and capital expenditures.

2/ Operating and maintenance cost divided by miles of rural roads.

3/ Estimated from subdivision plats.

4/ Cost per mile of rural roads times miles in survey subdivisions.

5/ Total operating and maintenance cost divided by miles of rural roads.

Weighted average based on sample would be \$607.

Source: County budgets and ERS survey.

Appendix table 25--Average daily attendance and associated costs of survey subdivisions on school districts

County	Average daily attendance (ADA) <u>1/</u>	Annual expenditures per ADA <u>2/</u>	Survey subdivisions	
			Children in local schools <u>3/</u>	Annual costs attributed to subdivisions <u>4/</u>
	<u>Number</u>	<u>Dollars</u>	<u>Number</u>	<u>Dollars</u>
Chaffee	2,665	967		
Custer	205	1,198		
Fremont	4,774	861	6	5,166
Huerfano	1,377	935	13	12,155
Lake	2,200	1,513		
Las Animas	3,201	1,524	6	9,144
Pueblo	30,062	1,081	385	416,185
Project area	44,484	1,100	410	442,650

1/ Grade kindergarten through 12.

2/ Includes expenditures for general use, bond redemption, building and capital reserve fund.

3/ Information on survey subdivision children was obtained from local schools.

4/ Expenditures per ADA times subdivision children in local schools.

Source: (1) and (2).

Appendix table 26--Wildlife that would be lost or displaced as a result of subdivision development

Species	Subdivided land	Subdivisions endangering wildlife	Counties with problems <u>1/</u>
	<u>Acres</u>	<u>Number</u>	<u>Number</u>
Mule deer	36,602	21	1, 2, 4, 7
Antelope	36,227	3	4, 7
Quail	20,500	1	7
Wild turkey	14,853	10	2, 4, 7
Peregrine falcon	6,896	1	4
Prairie falcon	6,896	1	4
Elk	3,452	12	1, 2, 4
Mountain lion	500	1	2
Blue grouse	102	1	4
Bighorn sheep	57	4	1
Pine squirrel	24	1	4

1/ Chaffee (1), Custer (2), Huerfano (4), Pueblo (7).

Source: Footnote 7, page 40.

Appendix table 27--Threatened or endangered species of wildlife that may be adversely affected by subdivisions, 1974

Threatened or endangered species <u>1/</u>	Subdivided land	Subdivisions endangering wildlife	Counties with endangered species <u>2/</u>
	<u>Acres</u>	<u>Number</u>	<u>Number</u>
Black-footed ferret	41	1	3
Peregrine falcon	17,167	3	3, 4, 7
Lynx <u>3/</u>	8,870	2	5, 7
Ringtail cat <u>3/</u>	8,831	1	7

1/ Within or near subdivision which could be adversely affected.

2/ Chaffee (1), Custer (2), Fremont (3), Huerfano (4), Lake (5), Las Animas (6), Pueblo (7).

3/ Not on an official national endangered list but may be close to extinction locally.

Source: Footnote 7, page 40.

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